

United States Government

Department of Energy

Oak Ridge Office

memorandum

DATE: AUG 19 2005

REPLY TO

ATTN OF: EM-94:Oldham

SUBJECT: ENVIRONMENTAL MANAGEMENT PROCEDURE EM-2.3, REVISION 0, "LESSONS
LEARNED PROGRAM" - APPROVED

TO: Environmental Management Staff, EM-90

The subject procedure, see attached, is issued for your use. Please read and familiarize yourself with it. It will be placed onto the Office of Environmental Management's Office Policies and Procedures Webpage, (http://www.oakridge.doe.gov/em/EMprocedures/index_EMSOPs2.htm) as soon as possible and will be available there for future reference.

If you have any questions or concerns about this procedure, please contact Steven Oldham at 576-7070.

S.H. McCracken

Stephen H. McCracken
Assistant Manager for
Environmental Management

Attachment

EM94:Oldham:576-7070:n:\tsad\nospt\EM-2.3 Approval Memo:kdoughty:576-8771:6/16/05

Concurrence
Rtg. Symbol EM-94
Initials <i>Oldham</i>
Date <i>6/16/05</i>
Rtg. Symbol EM-94
Initials <i>Perkins</i>
Date <i>6/16/05</i>
Rtg. Symbol EM-94
Initials <i>Jackson</i>
Date <i>7/11/05</i>
Rtg. Symbol EM-90
Initials <i>Boles</i>
Date <i>7/12/05</i>
Rtg. Symbol EM-90
Initials <i>McCracken</i>
Date <i>8/19/05</i>
Rtg. Symbol
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Assistant Manager for
Environmental Management

Attachment



**U. S. Department of Energy
Oak Ridge Office
Office of Environmental Management
Procedure**

LESSONS-LEARNED PROGRAM

**EM-2.3
Revision 0**

Prepared:

Steven K. Oldham

Steven K. Oldham -
Preparer

6/16/05
Date

Approved:

Stephen H. McCracken

Stephen H. McCracken -
Assistant Manager for Environmental Management

8/19/05
Date

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ACRONYMS

AMEM	Assistant Manager for Environmental Management
DOE	U. S. Department of Energy
EM	Office of Environmental Management
ES&H	Environmental Safety and Health
ETTP	East Tennessee Technology Park
HQ	DOE Headquarters
LL	Lessons-Learned
LLC	EM Lessons-Learned Coordinator
ORION2	Oak Ridge Issues, Open Items, and Non-conformances System
ORO	Oak Ridge Office

1.0 PURPOSE

The U. S. Department of Energy (DOE) Oak Ridge Office (ORO) has a formal Lessons Learned (LL) program. This program is instrumental in ensuring compliance with the Integrated Safety Management System (ISMS) core functional area, "Provide Feedback and Continuous Improvement." ORO's Office of Environmental Management (EM) is a major participant in this program.

LL programs, including accessible databases, should be reviewed at appropriate points while carrying out projects/operations in order to benefit from LL gathered and contained in them. Most databases (including the DOE-Headquarters (HQ) system, the Oak Ridge Issues, Open Items, and Non-conformances System (ORION2), and various contractor systems) have a "search" capability; e.g., see <http://www.eh.doe.gov/ll/lldb/llSearch.cfm>, which allows for easy review of past LL. Reviews may result in improvements in protection of the public, workers, and the environment as well as cost savings and schedule improvements.

This procedure will help EM Management and Staff to understand the EM LL program. It will assist in the proper handling of LL. It will also provide guidance on how to stay current with the ORO as well as the DOE Complex-wide program.

2.0 SCOPE

This procedure applies to all EM Management and Staff.

3.0 REFERENCES AND DEFINITIONS

3.1 References

- 40 CFR 970.5223-1, Integration of ES&H into Work Planning and Execution
- DOE O 414.1C, Quality Assurance, June 17, 2005
- DOE P 450.4, Safety Management System Policy; October 15, 1996
- DOE G 450.4-1B, Integrated Safety Management System Guide; March 1, 2001
- DOE-STD-7501-99, The DOE Corporate Lessons Learned Program, December 1999
- Memo: Boyd to All ORO and Support Services Contractor Employees: Subject; "Continuous Improvement Through Lessons Learned"; May 12, 2004

3.2 Definitions

Lessons-Learned (LL): A LL is either:

- a good work practice or innovative approach to problem solution that is captured and shared to promote repeat application, or
- an adverse work practice or experience that is captured and shared to avoid recurrence.

Oak Ridge Issues, Open Items, and Non-conformances (ORION2) system:

This is an ORO database system/tool which has many functions, see <http://www-internal.oro.doe.gov/esq/orion2/index2.htm>. It allows the entry of specific LL and future reference to them with various search and filtering capabilities potentially useful for review and comparison purposes to ongoing projects/operations. The database is also used in compiling the information necessary to prepare and issue LL monthly reports.

4.0 RESPONSIBILITIES

4.1 Assistant Manager for Environmental Management (AMEM)

The AMEM is responsible for ensuring that an effective LL program is in place.

4.2 Management

When the potential need arises, Management should decide if a LL is required and if so should assign a Preparer.

4.3 Lessons Learned Coordinator

This person administers the program. They represent EM in interfacing with other LL programs/organizations, e.g., HQ, ORO, and EM contractors.

4.4 Preparer

This person should prepare a quality LL in full compliance with ISMS and Quality Assurance principles, DOE and ORO Orders and Standards and this procedure.

4.5 Staff

All should be familiar with program requirements. This primarily consists of being vigilant to evaluate problem solutions/innovative approaches as well as incidents/adverse occurrences and taking appropriate action when candidates for entry into the program are found.

5.0 PROCEDURE

5.1 Need for LL

If information becomes available that may warrant being input into the LL program, the particulars should be discussed at appropriate levels of Management and Staff and a final decision should be made,

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5.2 Preparer Actions

If a Preparer is assigned, they should:

- 5.2.1 develop a draft using the LL template, see Attachments 1 and 2,
- 5.2.2 submit it for review and comment to appropriate personnel,
- 5.2.3 resolve comments received,
- 5.2.4 prepare a "for approval" package consisting of the LL and a memo transmitting it;
- 5.2.5 submit the package for Management concurrence and final approval by the AMEM,
- 5.2.6 after approval, retain a copy of the package for their files,
- 5.2.7 submit the package originals and an electronic version of the LL to the LLC (the electronic version must be prepared using the word processing software currently in use by EM which has "cut and paste" capability).

5.3 LLC Actions

Upon receipt, the LLC should:

- 5.3.1 enter the LL into ORION2 using the electronic version supplied,
- 5.3.2 notify Management and Staff via the EM Lessons-Learned Weekly,
- 5.3.3 ensure that the approved hard copy is placed into the official file,
- 5.3.4 coordinate consideration of its entry into the Complex-wide database. (This should include working with Management, the HQ LL Program Manager, and the ORO LL Program Manager.),
- 5.3.5 if deemed appropriate, submit it to the HQ LL Program Manager for their final review and input into the HQ Complex-wide database, see <http://www.eh.doe.gov/DOEII/SubmitLesson.asp>.

5.4 LL Weekly Preparation

The LLC should prepare and issue an EM Lessons-Learned Weekly Report by:

- 5.4.1 gathering all appropriate material available; including that in ORION2, items taken from HQ's LL reports, various contractor reports, etc.,

NOTE: Although no formal relationships exist between the various DOE and contractors' LL programs (not a DOE-STD-7501-99 requirement), LL are shared informally between many ORO federal and contractor participants and meetings are being held on a monthly basis.

- 5.4.2 performing a technical review of the information gathered as to worthiness and need for incorporation into report, and
- 5.4.3 preparing and issuing the report (normally weekly, unless circumstances prevent this) using the report template, see Attachment 3, to prepare the cover memo and enclosing the information via attachments.

5.5 LLC Vigilance

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The LLC should be vigilant to obtain and disseminate information, e.g., new Orders, Standards, training opportunities; about the DOE-HQ and ORO LL programs which may be instructive to Management and Staff.

6.0 RECORDS

Documents resulting from the use of this procedure are considered Quality Assurance records and should be maintained in accordance with the EM records management system.

7.0 ATTACHMENTS

Attachment 1, Lessons-Learned Template

Attachment 2, Lessons Learned - Example

Attachment 3, EM Weekly Template

ATTACHMENT 1

Lessons Learned Template (see DOE Standard DOE-STD-7501-99, Appendix A, for details)

Title:

Date:

Identifier:

Lessons Learned Statement:

Discussion of Activities:

Analysis (may be incorporated into the Discussion):

Recommended Actions:

Estimated Savings/Cost Avoidance (if applicable):

Priority Descriptor:

Work/Function:

User-Defined Category:

Hazard(s):

ISM Core Function(s):

Originator:

Contact:

Authorized Derivative Classifier:

Reviewing Official:

Keywords:

References:

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ATTACHMENT 2

LESSONS-LEARNED - EXAMPLE TAKEN FROM ORION2

Lesson #:	LES-V53-4/28/2005-47194
Entered By:	Steven Oldham
Date Entered:	4/28/2005
Site:	ETTP
Organization:	Environmental Management (EM)
Lesson Learned Trending Keyword:	Conduct of Operations Decontamination & Decommissioning Material Handling or Storage Radiation Protection
Other Tracking System?:	Other
Other Tracking #:	ID# 2005-ORO-EM-0001
Reference #:	
Subject:	Exothermic Metal Reaction Event during Sodium Transfer Activities, East Tennessee Technology Park, Oak Ridge Office, Oak Ridge, Tennessee
Lesson Statement:	Certify that all federal and/or state environmental, safety, and health (ES&H) protocols have been adequately specified prior to initiating any contract or subcontract work that will be performed in DOE leased facilities.
Discussion:	<p>On May 8, 2004, an exothermic metal reaction occurred during the heating of a surplus sodium-filled container at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee. The incident occurred when liquid sodium leaked from the primary and secondary containment vessels during the transfer of the sodium to Department of Transportation (DOT)-compliant shipping containers. The exothermic metal reaction started when the leaked liquid sodium contacted residual rainwater around the secondary containment structure. The incident happened in a facility leased from the U. S. Department of Energy (DOE).</p> <p>Immediately after the initial report of the accident at the leased facility, ETTP site Fire Department, Security, and Health Physics personnel were dispatched to the accident scene. In addition, site personnel and neighboring tenants were advised to shelter in place. Local governments and state emergency management agencies were notified, and a decision was made to activate the public warning siren systems. Roadblocks were established on local access roads to the site and on the Clinch River adjacent to the site. The National Response Center was notified. Teams were dispatched to perform field</p>

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	<p>monitoring and environmental sampling during and after the accident.</p> <p>As a safety pre-caution, the reaction of the sodium material outside the secondary containment was allowed to continue to its conclusion. Following the conclusion of the reaction, monitoring and nitrogen purge of the interior of the secondary containment was initiated. The sodium processing and transfer equipment was covered to prevent any rainwater incursion. All other sodium activities were suspended.</p>
Analysis:	The DOE Oak Ridge Office (ORO) serves as the National Center of Excellence for Materials Recycling (NCEMR) for the Complex for alternative disposition/recycling of obsolete and surplus materials and equipment for reuse or final disposition. This particular event occurred in a DOE facility leased by one of its material disposition contractors. This operation involved low levels of radiologically contamination materials. Essentially, sodium was contained in large cylinders and was being re-containerized prior to being shipped for reuse. All work of this nature must be performed under certain federal and/or state regulations. However, DOE Policy and Orders are silent on the implementation of DOE's ES&H requirements in DOE-owned facilities leased to private entities.
Recommended Actions:	All DOE sites with contractors or tenants should review their contractual and lease agreements to ensure the necessary ES&H protocols are incorporated appropriately. Hence, without effective DOE oversight, there is no assurance of effective safety management of operational controls or worker safety.
Priority:	Caution
ISM Category:	<p>Analyze the Hazards</p> <p>Define the Scope of Work</p> <p>Develop and Implement Hazard Controls</p>
Point of Contact:	Oldham, Steven
Comments:	<p>Hazard(s): Pressurized Systems</p> <p>Originator: William Bailey, EM-90; e-mail: BaileyWE@oro.doe.gov; ph: 865-576-6428</p> <p>Contact: William Bailey, EM-90; e-mail: BaileyWE@oro.doe.gov; ph: 865-576-6428</p> <p>Reviewing Official: Bob Sleeman, EM-90; e-mail: SleemanRC@oro.doe.gov; ph: 865-576-0715</p> <p>Keywords: Exothermic transfer, secondary containment, metal transfer, sodium, nitrogen, containers</p>

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	<p>References:</p> <p>DOE Order 5400.5 Radiation Protection of the Public and the Environment</p> <p>Type B Accident Investigation Report, May 8, 2004, Exothermic Metal Reaction Event During Sodium Transfer Activities, East Tennessee Technology Park, Oak Ridge, Tennessee</p> <p>Special Review Evaluation of Type B Accident Investigation Report/Results May 8, 2004, Exothermic Metal Reaction Event During Sodium Transfer Activities at the East Tennessee Technology Park</p> <p>Corrective Action Plan in Response to Type B Accident Investigation Report, May 8, 2004, Exothermic Metal Reaction Event During Sodium Transfer Activities, East Tennessee Technology Park, Oak Ridge, Tennessee</p>
Last Edited By:	Steven Oldham
Last Edit Date:	5/3/2005

ATTACHMENT 3

WEEKLY REPORT TEMPLATE

EM LESSONS-LEARNED FOR THE WEEK ENDING XXXXX

FYI

If you are interested in more detail than is in a Lessons-Learned summary an "Identifier" Code is usually provided which will take you directly to the detailed write-up. Go to the DOE Lessons-Learned Search Page, see <http://www.eh.doe.gov/l1/lldb/l1Search.cfm>. Insert the Identifier code, and click on Search.

Consider reviewing ORO's Lessons-Learned periodically by using the ORION2 database, see <http://www-internal.oro.doe.gov/esq/orion2/index3.htm>, go to Edit, then to Edit Lessons-Learned.

The *contractor's name*¹ Lessons Learned may be accessed via their Lessons-Learned Webpage, see *contractor's on-line address/url*.

Feel free to contact me for questions or assistance.

Thanks,
Name
EM Lessons-Learned Coordinator
email -xxxxxxxxxxxxxx
phone - xxxxxxxxxxxxxx
fax - xxxxxxxxxxxxxx

¹ If more than one contractor is being used, then this should be reflected appropriately.